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EXAMINER

NOTE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 01/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,859

Applicant(s)

LIM ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-12, 14 and 16 is/are rejected.
7) ☒ Claim(s) 13 and 15 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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1. The examiner acknowledges the cancellation of claims 17-20 and the amendments to claims 1, 3, 5, 6, 8, 9, 11, 13, 14, and 16 set forth in the amendment filed on Nov. 17, 2004.

Claims 1-16 are pending.

2. The objection to the specification set forth in the office action mailed on Aug. 20, 2004, paragraph 2, item (3), has been withdrawn in response to the disclosure at page 12, paragraph 0057, of a photoreceptor cartridge comprising a drum, and applicants' remarks filed on Nov. 17, 2004, page 11, lines 14-19.

The rejection of claims 3 and 11 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Aug. 20, 2004, paragraph 4, has been withdrawn in response to applicants' remarks filed on Nov. 17, 2004, page 12, lines 5-7, that because the "enamine stilbene" compounds are known in the art, no definition of the term "enamine stilbene" is needed. Accordingly, the examiner has interpreted the term "enamine stilbene polymer" to refer to any polymer that comprises both an enamine moiety and a stilbene moiety. If applicants do not agree with the examiner's definition, they should clearly state so, and indicate where there is antecedent basis in the originally filed specification for their definition.

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The rejections of claims 6, 8, 9, 13, 14, 17, and 19 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Aug. 20, 2004, paragraph 4, have been withdrawn in response to the amendments to claims 6, 1, 9, 13, and 14, respectively, and the cancellation of claims 17 and 19, set forth in the amendment filed on Nov. 17, 2004.

The rejections of claims 1-20 under 35 U.S.C. 112, second paragraph and first paragraph, set forth in the office action mailed on Aug. 20, 2004, paragraphs 5 and 7, respectively, have been withdrawn in response to amendments to claims 1 and 9, and the cancellation of claims 17-20 set forth in the amendment filed on Nov. 17, 2004.

The objections to claims 3, 8, 11, and 16 set forth in the office action mailed on Aug. 20, 2004, paragraph 8, have been withdrawn in response to the amendments to claims 3, 8, 11, and 16 set forth in the amendment filed on Nov. 17, 2004.

The rejection of claims 17-20 under 35 U.S.C. 103(a) over US 5,430,526 (Ohkubo) combined with Japanese Patent 10-020515 (JP'515), as evidenced by the ACS File Registry Number RN 26201-32-1, Japanese Patent 61-271050 (JP'050), and the Japanese Patent Office English language abstract describing JP'050, set forth in the office action mailed on Aug. 20, 2004,

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paragraph 16, has been mooted by the cancellation of claims 17-20 set forth in the amendment filed on Nov. 17, 2004.

3. The disclosure is objected to because of the following informalities:

There are numerous misspellings throughout the specification. For the example, "phthalocyan" and "enaminstylbene."

Appropriate correction is required.

Applicants' arguments filed on Nov. 17, 2004, have been fully considered but they are not persuasive.

Applicants assert that they filed a substitute specification, along with marked-up copy of specification, which corrects the misspellings.

However, neither the substitute specification nor a marked-up copy of the specification is present in the application file. Even if the substitute specification were present, it would not have been entered, because it would not have conformed to 37 CFR 1.125(b) and (c) because there is no statement as to a lack of new matter under 37 CFR 1.125(b). See the response filed on Nov. 17, 2004, pages 2 and 3. Accordingly, the objection stands.

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4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

(1) In claims 5-7, 13, and 14, the recited dispersion liquid comprising the "charge transfer material" and "polycarbonate" lacks antecedent basis in the specification. See paragraph 0019 of the specification, which discloses a dispersion liquid that comprises the charge generating material, the solvent 1,1,2-trichloroethane, and the polycarbonate of formula 5. The specification does not disclose the presence of the charge transfer material in the dispersion liquid. Furthermore, the term "polycarbonate" recited in instant claim 5 is broader than the disclosed polycarbonate of formula 5 because it encompasses polycarbonates that are not represented by formula 5.

(2) In claim 9, the recited dispersion liquid comprising the charge generating material and the polyethylene terephthalate polymer of the formula recited in instant claim 9 lacks antecedent basis in the specification. See paragraph 0026 of the specification, which discloses that the charge generating material is "dispersed together with binder resin," which can be those listed in paragraph 0026 of the specification, to form a

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dispersion liquid. The list of binder resins in paragraph 0026 does not include the polyethylene terephthalate polymer of the formula recited in instant claim 9. Paragraph 0030 of the specification discloses that the binder resin in the dispersion coating liquid may be the polyethylene terephthalate polymer of the formula recited in instant claim 9, which differs from the binder resin used in the dispersion liquid.

Applicants' arguments filed on Nov. 17, 2004, have been fully considered but they are not persuasive.

(1) Applicants assert that the disclosure in paragraphs 0015 and 0017 provides antecedent basis for the dispersion liquid recited in instant claim 5.

However, the originally filed specification in paragraphs 0015 and 0017 merely discloses a single-layered electrophotographic photoreceptor comprising particular components. There is no mention of a dispersion liquid as recited in instant claim 5 in those paragraphs.

(2) Applicants assert that the disclosure in paragraphs 0015 and 0019 provides antecedent basis for dispersion liquid recited in instant claim 9.

However, the originally filed specification in paragraph 0015 merely discloses a single-layered electrophotographic photoreceptor comprising particular

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components. There is no mention of a dispersion liquid as recited in instant claim 9 in paragraph 0015. Paragraph 0019 discloses a particular dispersion liquid comprising the titanyloxy phthalocyanine charge generating material, the polyethylene terephthalate polymer of the formula recited in instant claim 9, and the particular solvent 1,1,2-trichlorethane. There is no disclosure of the broadly recited "predetermined solvent" in claim 9.

37 CFR 1.75(d)(1) states that the "terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description" (emphasis added).

Applicants are reminded that to overcome the objections they merely have to amend the specification by incorporating the objected claim language of originally filed claim 5 and 9 in the appropriate locations.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 5-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5-7 are indefinite because it is not clear how the charge generating material is included in a dispersion liquid comprising the charge transfer material and a polycarbonate, when the charge generating material and charge transfer material are present on a substrate in the single-layered photoreceptor.

Claim 16 is indefinite in the phrase "the binder resin further includes polycarbonate and is a mixture of polycarbonate and polyethylene terephthalate polymer . . ." (emphasis added) for lack of unambiguous antecedent basis in claim 9, from which claim 16 depends. It is not clear to what binder resin recited in instant claim 9 "the binder resin" recited in instant claim 16 refers, e.g., the binder resin in the dispersion liquid or the binder resin in the dissolved charge transfer material.

Applicants' arguments filed on Nov. 17, 2004, have been fully considered but they are not persuasive.

(1) The rejection of claim 5:

Applicants assert that the disclosure in the specification in paragraph 0032 explains how the charge generating material is included in a dispersion liquid as recited in instant claim 5.

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However, the question is not how the charge generating material is formed on the conductive substrate, but how can the charge generating material, the charge transporting material, and another binder resin be present in a dispersion liquid and be present in a single layer on the electroconductive substrate of a single-layered photoconductor. The specification in paragraph 0035 discloses that the dispersion liquid is coated on the substrate. The coating is presumably dried before use. Applicants have not explained how can the components of a photoconductor can be present simultaneously in a dispersion liquid and in single-layered photoconductor.

Moreover, in the response filed on Nov. 17, 2004, page 16, regarding the examiner's interpretation of the claim language in claims 5-7 for the purpose of examination set forth in the office action mailed on Aug. 20, 2004, paragraph 11, applicants assert that claims 5 and 7, but not claim 6, are product-by-process claims.

However, in order to reject a claim over prior art, the claim language must be definite. Because the language in claims 5-7 is considered indefinite, the examiner must set forth an interpretation of the claim language so that the claims can be rejected over prior art. The examiner interpretation that the limitations recited in claims 5-7 are product-by-process

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limitations is merely to explore the possible relations between the prior art and applicants' invention, and does not remove the indefiniteness of the claims discussed above. Claims 5-7 are not written properly in product-by-process format. Accordingly, the rejection of claims 5-7 stand.

(2) Rejection of claim 16:

Applicants assert that the amendment of claim 9, to recite that the binder resin in the dispersion liquid comprises a polyethylene terephthalate polymer, overcomes the rejection of claim 16. However, the amendment to claim 9 did not address the rejection of claim 16. As noted in the rejection, claim 9 recites two binder resins, one in the dispersion liquid and the other in the dissolved charge transport material. Claim 16 does not recite what binder resin in claim 9 further includes polycarbonate and is a mixture "of polycarbonate and polyethylene terephthalate polymer." The recited polyethylene terephthalate in claim 16 does not necessarily refer to the polyethylene terephthalate recited in the dispersion liquid in claim 9.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 6 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 6 recites that the polycarbonate in the dispersion liquid of claim 5 is present in the amount of "10 wt% to 90 wt% with respect to a total weight of binder resin" (emphasis added).

Claim 14 recites that the polycarbonate in the dispersion liquid of claim 13 is present in the amount of "10 wt% to 90 wt% with respect to a total weight of binder resin" (emphasis added).

The originally filed specification does not provide an adequate written description of the amount of polycarbonate recited in instant claims 6 and 14. The originally filed specification, in paragraph 0020, and the originally filed

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claims 6 and 14 were silent on what was the basis of the amount of 10 wt% to 90 wt%. Applicants have not indicated where in the originally filed specification there is written support for the basis "total weight of the binder resin" in the dispersion liquid recited in instant claims 6 and 14.

9. Claims 4, 12, and 13 are objected to because of the following informalities:

In claims 4 and 12, the misspelling "metylene" in the term "dicyanometylene."

Claims 4 and 12 are missing terminal periods.

In claim 13, the word "the" in the recitation "and mixed with the dissolved the [sic] charge transfer material" is not proper idiomatic English.

Appropriate correction is required.

10. Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants are required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 10 recites that the limitation "the charge transfer material comprises a positive hole transfer material and an

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electron transfer material." However, claim 9, from which claim 10 depends, already recites "a charge transfer material comprising a positive hole transfer material, an electron transfer material . . . "

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. In the interest of compact prosecution, the examiner has interpreted the language recited in instant claims 5-7 as a product-by-process limitation for examination purposes only. In order to reject a claim over prior art, the claim language must be definite. Because the language in claims 5-7 is considered indefinite, the examiner must set forth an interpretation of the claim language so that the claims can be rejected over prior art. The examiner's interpretation that the limitations recited in claims 5-7 are product-by-process limitations is merely to explore the possible relations between the prior art and applicants' invention, and does remove the indefiniteness of the claims discussed in paragraph 6 above.

In the response filed on Nov. 17, 2004, applicants assert contrary to the examiner's assumption, the claim 6 is not a product-by-process claim.

However, the examiner has interpreted claim 6 to be a product-by-process claim because it depends on claim 5. The examiner has interpreted the language recited in instant claim 6 to refer the binder resin in the dispersion liquid.

13. Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0009419 A1 (Yokota), as evidenced by ACS File Registry RN 26201-32-1 and Japanese Patent 01-299874 (JP'874). See the USPTO translation of JP'874.

Yokota discloses a single-layered photoreceptor comprising an aluminum drum having thereon a photoconductive layer comprising (γ -titanyl phthalocyanine, a hole transport material, an electron transport material, and the polyester resin associated with the trademark O-PET obtained from KANEBO. Example 1 in paragraphs 0051 and 0052. The polyester resin associated with the trademark O-PET is represented by Yokota's formula 6. See paragraphs 0037 and 0038. The polyester resin disclosed by Yokota meets the polyester resin composition recited in the instant claims.

Yokota does not disclose that the γ -titanyl phthalocyanine has at least 2 main peaks at Bragg angles in the range of 9.5° to 27.3° as recited in the instant claims. However, as evidenced by the ACS File Registry Number RN 26201-32-01, it is well-known in

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the art that the titanyl phthalocyanine (TiOPc) has the chemical structure as recited in the instant claims. It is also well-known in the art that γ -titanyl phthalocyanine provides an $\text{CuK}\alpha$ X-ray diffraction pattern having peaks at the Bragg angles $2\theta \pm 0.2^\circ$ of 17.7° , 24.0° , and 27.2° , which are within the range recited in the instant claims. See the translation of JP'874, page 8, line 23, to page 9, line 2; page 22, line 23, to page 23, line 6; and Fig. 1. Thus, it is reasonable to conclude that the Yokota γ -titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in instant claims 1 and 2. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Applicants' arguments filed on Nov. 17, 2004, have been fully considered but they are not persuasive.

Applicants assert Yokota is not prior art because they have perfected their claim to foreign priority by filing a verified English-language translation of the certified copy of the priority document, Korea 2002-40105.

However, a copy of the verified translation is not present in the application. Accordingly, because applicants have not perfected their claim to foreign priority, Yokota is prior art.

Applicants also assert that the rejection under 35 U.S.C. 102(e) is not proper because "anticipation requires that

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every element of the invention be found in a single reference" (emphasis in the original). Applicants assert that Yokota does not disclose that its γ -titanyl phthalocyanine exhibits the diffraction pattern recited in instant claim 1.

However, a "35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to . . . explain the meaning of a term used in the reference . . . or . . . show that a characteristic not disclosed in the reference is inherent." MPEP 2131.01 (8th edition, Rev. 2, May 2004). In the instant rejection, the ACS file registry number is cited to show that the Yokota γ -titanyl phthalocyanine meets the chemical formula recited in instant claim 1. JP'874 is cited to show that the Yokota γ -titanyl phthalocyanine inherently exhibits a X-ray diffraction pattern that meets the diffraction limitation recited in instant claim 1. Thus, the citations of the ACS file registry number and JP'874 are proper, and for the reasons discussed in the rejection, the Yokota γ -titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in the instant claim 1. Accordingly, Yokota teaches every limitation recited in instant claims 1 and 2, and the rejection over Yokota stands.

Applicants further assert that none of the references discloses the combination of a Y-form titanyloxy phthalocyanine

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and the polyethylene terephthalate polymer recited in instant claim 1.

However, claim 1 does not recite that the titanyloxy phthalocyanine is of the "Y-form." Applicants cannot argue patentability based on limitations that are not present in the claims. Thus, the rejection over Yokota of claims 1 and 2 stands.

14. Claims 1, 2, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 10-020515 (JP'515), as evidenced by the ACS File Registry Number RN 26201-32-1 and Japanese Patent 61-271050 (JP'050). See the THOMSON machine-assisted English language translation of JP'515 and the USPTO translation of JP'050 for cites.

JP'515 discloses a single-layered photoreceptor comprising an aluminum drum having thereon a photoconductive layer comprising alpha titanylphthalocyanine, a hole transport material, an electron transport material, a polycarbonate resin, and the polyester resin associated with the trademark O-PET obtained from Kanebo, Ltd. See the THOMAS translation of JP'515, paragraphs 0046-0055, and example 3 in paragraphs 0059-0061. The polyester resin associated with the trademark O-PET is a copolymer comprising the units represented

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by JP'515 formula 11 and ethylene terephthalate. The polyester resin disclosed by JP'515 meets the polyester resin composition recited in the instant claims. The polycarbonate and polyester resins are each present in an amount of 7 parts by weight.

Thus, the weight ratio of the polycarbonate to the polyester is 1:1, which is within the range of 1:99 to 99:1 recited in instant claim 8.

JP'515 does not disclose that the alpha titanyl / phthalocyanine has at least 2 main peaks at Bragg angles in the range of 9.5° to 27.3° as recited in the instant claims. However, as evidenced by the ACS File Registry Number RN 26201-32-1 and the USPTO translation of JP'050, page 6, it is well-known in the art that titanyl phthalocyanine (TiOPc) has the chemical structure as recited in the instant claims. It is also well-known in the art that alpha titanyl phthalocyanine provides an $\text{CuK}\alpha$ X-ray diffraction pattern having peaks at the Bragg angles $2\theta \pm 0.2^{\circ}$ of 12.3° , 16.3° , and 23.3° , which are within the range recited in the instant claims. See the USPTO translation, page 6, line 17, to page 7, line 2; page 7, lines 12-14; and Fig. 1. Thus, it is reasonable to conclude that the JP'515 alpha titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in instant claim 1. The burden is on applicants to prove otherwise. Fitzgerald, supra.

15. Claims 5-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP'515, as evidenced by the ACS File Registry Number RN 26201-32-1 and JP'050. See the THOMAS machine-assisted English translation of JP'515 and the USPTO translation of JP'050 for cites.

JP'515 discloses a single-layered photoreceptor as described in paragraph 14 above, which is incorporated herein by reference. As discussed in paragraph 14 above, the polycarbonate resin and polyester resin are present in the layer in a weight ratio of 1:1.

Instant claims 5-7 are written in product-by-process format. JP'515 does not exemplify forming the photoconductive layer as recited in the instant claims. JP'515 discloses forming a dispersion by dispersing its alpha titanyl-phthalocyanine, the hole transport material, the electron transport material, and polycarbonate in chloroform, where the polycarbonate is present in an amount of 50 wt% based on the amount of binder resin in the dispersion. The amount of 50 wt% is within the range of 10 to 90 wt% with respect to the total amount of binder resin recited in instant claim 6. The amount of 50 wt% is determined from the information provided in

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example 3 of JP'515. Furthermore, as discussed in paragraph 14 above, the single-layered photoreceptor disclosed by JP'515 meets the compositional limitations recited in the instant claims. Accordingly, the photoreceptor disclosed by JP'515 appears to be the same or substantially the same as the photoreceptor made by the method recited in the instant claims. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

16. Applicants' arguments filed on Nov. 17, 2004, regarding the rejections over JP'515 set forth in paragraphs 14 and 15 above have been fully considered but they are not persuasive.

Applicants assert that the rejection under 35 U.S.C. 102(b) is not proper because "anticipation requires that every element of the invention be found in a single reference" (emphasis in the original). Applicants assert that JP'515 does not disclose that its alpha titanyl phthalocyanine exhibits the diffraction pattern recited in instant claim 1.

However, as discussed in paragraph 13, supra, the citation of multiple references in 35 U.S.C. 102 rejection is proper when "extra references are cited to . . . explain the meaning of a term used in the reference . . . or . . . show that a

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characteristic not disclosed in the reference is inherent."

MPEP 2131.01. In the instant rejection, the ACS file registry number and JP'050 are cited to show that the JP'515 alpha titanyl phthalocyanine meets the chemical formula recited in instant claim 1. JP'050 is also cited to show that the JP'515 alpha titanyl phthalocyanine inherently exhibits a X-ray diffraction pattern that meets the diffraction limitation recited in instant claim 1. Thus, the citations of the ACS file registry number and JP'050 are proper. For the reasons discussed in the rejection in paragraph 14 above, the JP'515 alpha titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in the instant claim 1. Accordingly, JP'515 teaches every limitation recited in instant claims 1, 2, and 8 and the compositional limitations recited in instant claims 5-7. The rejections of claims 1, 2, and 8 under 35 U.S.C. 102(b) and of claims 5-7 under 35 U.S.C. 102(b)/103(a) over JP'515 stand.

Applicants further assert that none of the references discloses the combination of a Y-form titanyloxy phthalocyanine and the polyethylene terephthalate polymer recited in instant claim 1.

However, claim 1 does not recite that the titanyloxy phthalocyanine is of the "Y-form." Applicants cannot argue

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patentability based on limitations that are not present in the claims. Thus, the rejections over JP'515 stand.

17. Claims 1, 2, 4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 2000-075509 (JP'509), as evidenced by the ACS File Registry Number RN 26201-32-1 and JP'050, combined with JP'515. See the USPTO translation of JP'050 and the THOMAS machine-assisted English translations of JP'509 and JP'515 for cites.

JP'509 discloses a single-layered photoreceptor comprising an aluminum drum having thereon a photoconductive layer comprising alpha titanylphthalocyanine, a hole transport material, a fluorenylidene malononitrile electron transport compound of formula (5), and a binder resin. See the THOMAS translation of JP'505, paragraphs 0039-0044, and example 4 in paragraph 0051-0053. The fluorenylidene malononitrile compound of formula (5) meets the electron transport material compositional limitation recited in instant claim 4.

JP'509 does not disclose that the alpha titanyl phthalocyanine has at least 2 main peaks at Bragg angles in the range of 9.5° to 27.3° as recited in the instant claims.

However, as evidenced by JP'050 and the ACS File Registry Number RN 26201-32-1, it is well-known in the art that the alpha

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titanyl phthalocyanine has the chemical structure and the X-ray diffraction pattern as recited in the instant claims. The discussions of JP'050 and the ACS File Registry Number RN 26201-32-1 set forth in paragraph 14 above are incorporated herein by reference. Thus, it is reasonable to conclude that the JP'509 alpha titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in instant claim 1. The burden is on applicants to prove otherwise. Fitzgerald, supra.

JP'509 does not disclose that the binder resin comprises the polyester resin recited in the instant claims. However, JP'509 discloses that the binder resin may be a polyester resin. JP'509 further teaches that the binder resin may be a mixture of two or more different resins. THOMAS translation of JP'509, paragraph 0024, lines 5 and 22-23.

JP'515 teaches that the binder resin in a single-layered photoreceptor may comprise a polyester resin comprising a biphenylfluorene structure associated with the trademark O-PET obtained from Kanebo, Ltd., and a polycarbonate resin. THOMAS translation of JP'515, paragraphs 0012-0014, 0032, and 0034. JP'515 discloses that the polyester comprising a biphenylfluorene structure may be the polyester associated with the trademark O-PET, which is a copolymer comprising the units represented by JP'515 formula 11 and ethylene terephthalate.

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Translation, paragraphs 0034 and 0060-0061. The polyester resin O-PET disclosed by JP'515 meets the polyester resin composition recited in the instant claims. JP'515 teaches that the polyester resin may be present in the weight ratio of 5 to 100 parts by weight to 100 parts by weight of the polycarbonate resin. THOMAS translation of JP'515, paragraph 0035. The weight ratio is within the weight ratio range of 1:99 to 99:1 recited in instant claim 8. According to JP'515, when its binder resin is used as the binder resin in a single-layered photoreceptor, the photoreceptor has excellent property in coating-film strength and electrical properties in positive charging, and good repetition characteristics. THOMAS translation of JP'515, paragraphs 0001, 0011, 0076, and 0077.

It would have been obvious for a person having ordinary skill in the art to use the binder resin taught by JP'515 as the binder resin in the single-layered photoreceptor disclosed by JP'509, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic single-layered photoreceptor having the benefits disclosed by JP'515.

Applicants' arguments filed on Nov. 17, 2004, have been fully considered but they are not persuasive.

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Applicants assert that JP'509 fails to disclose that its alpha titanyl phthalocyanine exhibits the X-ray diffraction pattern recited in instant claim 1. Applicants further assert that neither JP'509 nor JP'050 teaches the polyethylene terephthalate polymer cited in instant claim 1. Applicants also assert that the cited prior art does not provide any motivation to combine the references to arrive at the photoreceptor recited in the instant claims.

However, the ACS file registry number and JP'050 are cited to show that the JP'515 alpha titanyl phthalocyanine meets the chemical formula recited in instant claim 1. JP'050 is also cited to show that the JP'515 alpha titanyl phthalocyanine inherently exhibits a X-ray diffraction pattern that meets the diffraction limitation recited in instant claim 1. Thus, for the reasons discussed in the rejection above, the JP'509 alpha titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in the instant claim 1.

As discussed in the rejection above, JP'515 teaches a binder resin that meets the binder resin compositional limitations recited in the instant claims. The JP'515 binder resin comprises a polyester resin that meets the compositional limitations of the polyethylene terephthalate recited in the instant claims and a polycarbonate. JP'515 also teaches the

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benefits of using its binder resin in a single-layered photoreceptor. See the rejection above, pages 23-24. Thus, JP'515 provides reason, suggestion, and motivation to a person having ordinary skill in the to use the JP'515 binder resin as the binder resin in the single-layered photoreceptor disclosed by JP'509. Accordingly, for the reasons discussed in the rejection above, the combined teachings of the prior art render obvious the photoreceptor recited in instant claims 1, 2, 4, and 8.

Applicants further assert that none of the references discloses the combination of a Y-form titanyloxy phthalocyanine and the polyethylene terephthalate polymer recited in instant claim 1.

However, claim 1 does not recite that the titanyloxy phthalocyanine is of the "Y-form." Applicants cannot argue patentability based on limitations that are not present in the claims. Thus, the rejection stands.

18. Claims 1-4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/00228534 A1 (Zhu), as evidenced by applicants' admission in paragraph 0033 of the instant specification of the chemical identity of the material associated with the tradename MPCT 10 obtained from Mitshubishi

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[sic: Mitsubishi] Paper Mill Co., combined with US 6,528,645 B1 (Hamasaki) and JP'515. See the THOMAS translation of JP'515 for cites. The disclosure relied on in Zhu for the rejection has an effective filing date of May 31, 2002, as evidenced in the provisional application 60/385,233 (Application'233).

Zhu discloses a single-layered photoreceptor comprising a an aluminum coated substrate having thereon a photoconductive layer comprising titanylphthalocyanine, an enamine-stilbene based the hole transport material associated with the trademark MPCT-10 obtained from Mitsubishi Paper Mills, the electron transport compound (4-n-butoxy-9-fluorenylidene)malononitrile, and a polyvinylbutyral binder resin. Zhu, paragraphs 0065-0067 and preparation of examples 1-3 at paragraph 0069; and Application'333, page 12, line 20, to page 13, line 8; examples 1-3 at page 13, lines 9-13. The electron transport compound is within the compositional limitation recited in instant claim 4. Zhu does not identify the hole transport material MPCT-10 as an enamine-stilbene polymer as recited in instant claim 3. However, the originally filed specification in paragraph 0033 identifies the tradename MPCT-10 as a "charge transfer material of enaminstylbene [sic] polymer."

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Zhu does not disclose that the titanyl phthalocyanine has at least 2 main peaks at Bragg angles in the range of 9.5° to 27.3° as recited in the instant claims.

Hamasaki discloses titanyl phthalocyanine crystals that exhibit a maximum peak in the powder X-ray diffraction pattern at the Bragg angle $2\theta \pm 0.2^{\circ}$ of 27.2° , and main peaks at Bragg angles 9.5° and 24.1° . See col. 6, lines 3-39, and, for example, Preparation example 1 at cols. 20-21, col. 23, lines 16-20, and Figs. 2 and 3. Hamasaki's titanyl phthalocyanine crystals are within the compositional limitations recited in the instant claims. According to Hamasaki, when its titanyl phthalocyanine crystals are used in positively charged single layer photosensitive layers, the layers have good sensitivity characteristics "that are always stable regardless of the lapsed time after preparing the coating solution" comprising said titanyl phthalocyanine crystals. Col. 3, lines 64-67, and Table 2, examples 1-12.

It would have been obvious for a person having ordinary skill in the art to use Hamasaki's titanyl phthalocyanine crystals as the titanyl phthalocyanine charge generating material in the photoreceptor disclosed by Zhu, because that person would have had a reasonable expectation of successfully

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obtaining a positively charged single-layered photoreceptor having good stable sensitivity characteristics.

Zhu also does not disclose that the binder resin may be the polyester resin recited in the instant claims. However, Zhu discloses that the binder resin used in the single-layered photoreceptor may be a polycarbonate resin or a polyester resin. Zhu also discloses that the binder resin may be a combination of resins. Zhu, paragraph 0038, lines 11, 13, and 18-19; and Application'333, page 6, lines 9, 10, and 13-14.

JP'515 teaches that the binder resin in a single-layered photoreceptor may comprise a polycarbonate resin and a polyester resin comprising a biphenylfluorene structure that meets the polyester compositional limitation recited in the instant claims. The discussion of JP'515 in paragraph 17, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings in JP'515, to use the binder resin taught by JP'515 as the binder resin in the single-layered photoreceptor rendered obvious over the combined teachings of Zhu and Hamasaki, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic single-layered photoreceptor having the benefits disclosed by JP'515.

19. Claims 9-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu, as evidenced by applicants' admission in paragraph 0033 of the instant specification of the chemical identity of the material associated with the tradename MPCT 10 obtained from Mitshubishi [sic: Mitsubishi] Paper Mill Co., combined with Hamasaki and JP'515, further combined with US 6,284,031 B1 (Healy). See the THOMAS translation of JP'515 for cites.

Zhu combined with the teachings in Hamasaki and JP'515 renders obvious a single-layered photoreceptor as described in paragraph 18 above, which is incorporated herein by reference.

Zhu further teaches that said single-layered photoreceptor is obtained by the following steps: (1) milling the titanylphthalocyanine and the binder resin in a solvent with zirconium beads to form a pigment dispersion liquid; (2) mixing the binder resin with the hole transport material and electron transport material, and a solvent to form a solution; (3) mixing the dispersion liquid of step (1) with the solution of step (2) to form a coating liquid; and (4) coating the aluminum coated substrate with the coating liquid of step (3) to form the single-layered photoreceptor drum. See Zhu, paragraphs 0067 and

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0069; and Application'033, page 12, line 21, to page 13, line 13.

Zhu does not explicitly disclose removing the milling zirconium beads from the pigment dispersion liquid after formation of said dispersion liquid. However, Zhu does not disclose that the zirconium beads are part of the single-layered photoreceptor. Moreover, it is well-known in the art of forming pigment dispersions to remove the milling beads after forming the pigment dispersion liquids. See Healy, col. 7, lines 64-67, which discloses that after forming a pigment dispersion liquid, the dispersion liquid is strained through a cone sieve to remove the milling beads.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Hamasaki and JP'515, to use the titanyl phthalocyanine disclosed by Hamasaki as the titanyl phthalocyanine charging material and the binder resin disclosed by JP'515 as the binder resin in the method disclosed by Zhu, because that person would have had a reasonable expectation of successfully obtaining a single-layered photoreceptor having the benefits disclosed by Hamasaki and JP'515. It would have also obvious for that person, in view of the teachings in Healy, to remove the milling zirconium beads from the pigment dispersion liquid in method rendered obvious

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over the combined teachings of Zhu, Hamasaki, and JP'515, because that person would have had a reasonable expectation of successfully removing the milling beads used to form the pigment dispersion liquid and obtaining a single-layered photoreceptor having the benefits disclosed by Hamasaki and JP'515.

20. Applicants' arguments filed on Nov. 17, 2004, with respect to the rejections over Zhu set forth in paragraphs 18 and 19 above have been fully considered but they are not persuasive.

Applicants assert that Zhu is not prior art because they have perfected their claim to foreign priority by filing a verified English-language translation of the certified copy of the priority document, Korea 2002-40105.

However, a copy of the verified translation is not present in the application. Furthermore, as discussed in the rejection in paragraph 18 above, Zhu has an effective filing date of May 31, 2002, which is prior to the foreign priority filing date of Jul. 10, 2002. Accordingly, Zhu is prior art.

Applicants further assert that Hamasaki does not teach the use of the polyethylene phthalate polymer recited in the instant claims and that JP'515 does not disclose that its alpha titanyl phthalocyanine exhibits a X-ray diffraction pattern as recited in instant claim 1. Regarding the rejection of claims 9-12

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and 16 in paragraph 19 above, applicants assert that Healy does not teach the polyester resin recited in instant claim 1.

Applicants also assert that the cited prior art does not provide any motivation to combine the references to arrive at the photoreceptor recited in the instant claims.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Moreover, as discussed in the rejection in paragraph 18 above, Hamasaki teaches a titanyl phthalocyanine that meets the limitations recited in instant claim 1. Hamasaki also teaches the benefits of using its titanyl phthalocyanine as the charge generating material in a single-layered photoreceptor. See the rejection in paragraph 18 above, page 28. JP'515 teaches a binder resin that meets the binder resin compositional limitations recited in the instant claims. The JP'515 binder resin comprises a polyester resin that meets the compositional limitations of polyethylene terephthalate recited in the instant claims and a polycarbonate. JP'515 also teaches the benefits of using its binder resin in a single-layered photoreceptor. See

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the rejection in paragraph 18 above, page 29, which incorporates the discussion of JP'515 in paragraph 17, pages 23-24. Thus, Hamasaki and JP'515 provide reason, suggestion, and motivation to a person having ordinary skill in the to use the Hamasaki titanyl phthalocyanine and the JP'515 binder resin, respectively, as charge generating material and the binder resin in the single-layered photoreceptor disclosed by Zhu. Accordingly, for the reasons discussed in the rejection in paragraph 18 above, the combined teachings of the prior art render obvious the photoreceptor recited in instant claims 1-4 and 8.

Furthermore, as discussed in paragraph 19 above, Healy shows that it is well-known in the art of forming pigment dispersions to remove the milling beads after forming pigment dispersions. Accordingly, for the reasons discussed in the rejection in paragraph 19 above, the combined teachings of the prior art render obvious the method of making a photoreceptor recited in instant claims 9-12 and 16.

Applicants further assert that none of the references discloses the combination of a Y-form titanyloxy phthalocyanine and the polyethylene terephthalate polymer recited in instant claim 1.

However, claim 1 does not recite that the titanyloxy phthalocyanine is of the "Y-form." Applicants cannot argue patentability based on limitations that are not present in the claims. Thus, the rejections stand.

21. Claims 1, 2, 4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2004/0096761 A1 (Lin), as evidenced by the ACS File Registry Number RN 26201-32-1 and US 5,350,844 (Martin), combined with JP'515. See the THOMAS translation of JP'515 for cites.

Lin discloses a single-layered photoreceptor comprising a aluminum drum having thereon a photoconductive layer comprising Type IV titanylphthalocyanine, a hole transport material, an electron transport compound, and a polycarbonate binder resin. Example 1 at paragraphs 0062-0063.

Lin does not exemplify the use of an electron transport compound as recited in instant claims 4 and 12. However, Lin teaches that the electron transport compound may equally be (4-n-butoxycarbonyl-9-fluorenylidene) malononitrile, which meets the electron transport material compositional limitation recited in instant claim 4. Paragraph 0049.

Lin does not disclose that the Type IV titanyl phthalocyanine has at least 2 main peaks at Bragg angles in the

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range of 9.5° to 27.3° . However, as evidenced by the ACS File Registry Number RN 26201-32-1, it is well-known in the art that titanyl phthalocyanine has the chemical structure recited in the instant claims. Martin discloses that the Type IV titanyl phthalocyanine provides an X-ray diffraction pattern having at least two peaks at the Bragg angles $2\theta \pm 0.2^{\circ}$ in the range of 9.5 to 27.3° . See Martin, Fig. 3 and example II at cols. 18-19. Thus, it is reasonable to conclude that the Lin Type IV titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in instant claim 1. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Lin does not disclose that the binder resin comprises the polyester resin recited in the instant claims. However, Lin discloses that the binder resin may equally be a polyester resin. Lin, paragraph 0060, line 6.

JP'515 teaches that the binder resin in a single-layered photoreceptor may comprise a polycarbonate resin and a polyester resin comprising a biphenylfluorene structure that meets the polyester compositional limitation recited in the instant claims. The discussion of JP'515 in paragraph 17, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Lin and JP'515, to

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use (4-n-butoxycarbonyl-9-fluorenylidene) malononitrile as the electron transfer material and the binder resin taught by JP' 515 as the binder resin in the single-layered photoreceptor disclosed by JP' 509, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic single-layered photoreceptor having the benefits disclosed by JP' 515.

22. Claims 9, 10, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin, as evidenced by the ACS File Registry Number RN 26201-32-1 and Martin, combined with JP' 515 and Healy. See the THOMAS translation of JP' 515 for cites.

Lin combined with the teachings of JP' 515 renders obvious a single-layered photoreceptor as described in paragraph 21 above, which is incorporated herein by reference.

Lin further discloses that said single-layered photoreceptor is obtained by the following steps: (1) roll milling titanyl phthalocyanine (TiOPC(IV)) and the polycarbonate resin in a solvent with milling steel balls to form a pigment dispersion; (2) mixing the polycarbonate resin with the hole transport material, the electron transport material, and a solvent until the solids are dissolved; (3) mixing the pigment

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dispersion of step (1) with the solution of step (2) to form a coating liquid; and (4) coating an aluminum drum with the coating liquid to form the single-layered photoreceptor drum.

See example 1.

Lin does not explicitly disclose removing the milling steel balls from the pigment dispersion after formation of said dispersion. However, Lin does not disclose that the steel balls are part of the single-layered photoreceptor. Moreover, it is well-known in the art of forming pigment dispersions to remove the milling beads after forming the pigment dispersion liquids. See Healy, col. 7, lines 64-67, which discloses that after forming a pigment dispersion liquid, the dispersion liquid is strained through a cone sieve to remove the milling beads.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Lin and JP'515, to use (4-n-butoxycarbonyl-9-fluorenylidene) malononitrile as the electron transfer material and the binder resin taught by JP'515 as the binder resin in the method disclosed by Lin, because that person would have had a reasonable expectation of successfully obtaining a single-layered photoreceptor having the benefits disclosed by JP'515. It would have also obvious for that person, in view of the teachings in Healy, to remove the milling steel balls from the pigment dispersion in method rendered

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obvious over the combined teachings of Lin and JP'515, because that person would have had a reasonable expectation of successfully removing the milling balls used to form the pigment dispersion and obtaining a single-layered photoreceptor having the benefits disclosed by JP'515.

23. Applicants' arguments filed on Nov. 17, 2004, with respect to the rejections over Lin in paragraphs 21 and 22 above have been fully considered but they are not persuasive.

Applicants assert that Lin is not prior art because they have perfected their claim to foreign priority by filing a verified English-language translation of the certified copy of the priority document, Korea 2002-40105.

However, a copy of the verified translation is not present in the application. Accordingly, because applicants have not perfected their claim to foreign priority, Lin is prior art.

Applicants further assert that Martin does not teach the use of the polyethylene phthalate polymer recited in the instant claims and that JP'515 does not disclose that its alpha titanyl phthalocyanine exhibits a X-ray diffraction pattern as recited in instant claim 1. Regarding the rejection of claims 9, 10, 12, and 16 in paragraph 22 above, applicants assert that Healy does not teach the polyester resin recited in instant claim 1.

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Applicants also assert that the cited prior art does not provide any motivation to combine the references to arrive at the photoreceptor recited in the instant claims.

However, as discussed in paragraph 21 above, the ACS File registry number is cited to show that the Lin Type IV titanyl phthalocyanine meets the chemical formula recited in instant claim 1 and. Martin is cited to show that the Lin Type IV titanyl phthalocyanine inherently exhibits an X-ray diffraction pattern that meets the diffraction limitation recited in instant claim 1. Thus, for the reasons discussed in the rejection in paragraph 20 above, the Lin Type IV titanyl phthalocyanine meets the titanyl phthalocyanine limitations recited in the instant claim 1.

As discussed in the rejection in paragraph 21 above, JP'515 teaches a binder resin that meets the binder resin compositional limitations recited in the instant claims. The JP'515 binder resin comprises a polyester resin that meets the compositional limitations of polyethylene terephthalate recited in the instant claims and a polycarbonate. JP'515 also teaches the benefits of using its binder resin in a single-layered photoreceptor. See the rejection in paragraph 21 above, page 35, which incorporates the discussion of JP'515 in paragraph 17 above, pages 23-24. Thus, JP'515 provides reason, suggestion, and motivation to a

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person having ordinary skill in the to use the JP'515 binder resin as the binder resin in the single-layered photoreceptor disclosed by Lin. Accordingly, for the reasons discussed in the rejection above, the combined teachings of the prior art render obvious the photoreceptor recited in instant claims 1, 2, 4, and 8.

Furthermore, as discussed in paragraph 22 above, Healy shows that it is well-known in the art of forming pigment dispersions to remove the milling beads after forming pigment dispersions. Accordingly, for the reasons discussed in the rejection in paragraph 22 above, the combined teachings of the prior art render obvious the method of making a photoreceptor recited in instant claims 9, 10, 12, and 16.

Applicants further assert that none of the references discloses the combination of a Y-form titanyloxy phthalocyanine and the polyethylene terephthalate polymer recited in instant claim 1.

However, claim 1 does not recite that the titanyloxy phthalocyanine is of the "Y-form." Applicants cannot argue patentability based on limitations that are not present in the claims. Thus, the rejections stand.

24. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy

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reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

25. Claims 1 and 2 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-7, 9-12, 15, and 16 of copending Application No. 10/459,720 (Application'720) in view of Hamasaki.

This is a provisional obviousness-type double patenting rejection.

Reference claim 3, which depends from reference claim 1, recites a single-layered photoreceptor comprising an electrically conductive substrate having thereon a layer comprising a particular polyester binder resin, a hole transfer material, and a charge generating material. Reference claim 5, which depends on reference claim 1, recites that the particular

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polyester resin may have be represented by the chemical formula recited in the instant claims. Reference claim 4, which depends from reference claim 1, further requires that the layer further comprise an electron transport. Reference claim 16, which depends from reference claim 15, recites an electrophotographic drum comprising a photoreceptor disposed on the drum comprising an electrically conductive substrate having thereon a layer comprising the particular polyester binder resin, as recited in reference claim 3, and a hole transfer material.

The reference claims do not recite that the charge generating material is a titanyloxy phthalocyanine as recited in the instant claims.

Hamasaki discloses titanyl phthalocyanine crystals that exhibit at least two main peaks at Bragg angle 22 ± 0.2 in the range of 9.5° and 24.1° as recited in the instant claims. The discussion of Hamasaki in paragraph 18 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Application'720 and the teachings of Hamasaki, to make and use a single-layered photoreceptor comprising Hamasaki's titanyl phthalocyanine crystals as the charge generating material, such that the resultant photoreceptor meets the limitations recited

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in the instant claims, because that person would have had a reasonable expectation of successfully obtaining a positively charged single-layered photoreceptor having good stable sensitivity characteristics.

Applicants' arguments filed on Nov. 17, 2004, have been fully considered but they are not persuasive.

Applicants assert that the rejection is premature because Application'720 has not issued as a patent and the claims in Application'720 may change.

The rejection is not premature. The subject matter recited in the claims of Application'720 as of Jan. 26, 2004, combined with the teachings of Hamasaki, still render obvious the photoreceptor recited in instant claims 1 and 2. Accordingly, the rejection stands.

26. Claim 13 is are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and overcome the objection set forth in this office action.

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent

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form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not teach or suggest the method of making a photoreceptor as recited in instant claim 13, which requires the use of 1,1,2-trichloroethane. Nor does the prior art of record teach or suggest the milling temperature of "below 15°C" recited in instant claim 15.

The method disclosed by Zhu uses tetrahydrofuran as a solvent. Zhu, paragraph 0067. Zhu does not teach or suggest the use of 1,1,2-trichloroethane.

The method disclosed by Lin uses tetrahydrofuran and monochloroform. See example 1. Lin teaches that the coating solvent may be a trichloroethane. Page 5, paragraph 0045, line 17. However, Lin does not teach or suggest the trichloroethane is 1,1,2-trichloroethane.

Neither Zhu nor Lin teaches or suggests milling the dispersion liquid at the temperature recited in instant claim 15.

27. This office action was not made final because of the citations to the USPTO translations of JP61-217050 and JP 01-299874, the THOMAS translations of JP 2000-75509 and JP 10-20515, and the US provisional application 60/385233.

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28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Jan. 26, 2005


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